APPENDIX - Pending claims

1.   A method of provisioning a cable modem in a cable modem network having a provisioning system and a headend, the method comprising:

transmitting a configuration file to a cable modem;

receiving, at a headend, a first data packet from a first cable modem, the first data packet having a first service flow, the first data packet being mapped to a first sub-interface;

receiving, at a headend, a second data packet from the first cable modem, the second data packet having a second service flow, the second data packet being mapped to a second sub-interface;

deriving the first service flow and the second service flow at the headend; and

tagging the first data packet with a first MPLS tag and tagging the second data packet with a second MPLS tag, wherein the headend is unmodified.

2.   A method as recited in claim 1 further comprising examining a configuration file at the headend using a SID to determine a service flow.

3.   A method as recited in claim 2 wherein the configuration file contains a plurality of MPLS tags associated with a plurality of service flows.

4.   A method as recited in claim 1 further comprising downloading vendor-specific information and MPLS data to a configuration file before transmitting the configuration file to the cable modem.

5.   A method as recited in claim 1 further comprising modifying the configuration file at the provisioning system.

6.   A method of mapping an MPLS tag to a data packet in a CMTS comprising:

receiving a data packet having a SID;

using the SID to obtain a service flow assigned to the data packet;

determining an appropriate MPLS tag for the data packet based on the service flow; and

tagging the data packet with the MPLS tag before transmitting the data packet to an external entity.

7.   A method of enabling a cable modem to service multiple quality of service levels for a data packet transmitted from one or more connected IP-addressable devices, the method comprising:

receiving a configuration file upon powering up the cable modem, the configuration file containing one or more MPLS tags, an MPLS tag being associated with a service flow;

receiving a data packet from a connected IP-addressable device, the data packet having an IP address;

examining the IP address of the data packet; and

determining a classifier based on the IP address by examining the configuration file.

8.   A system for provisioning a cable modem in a cable modem network having a provisioning system and a headend, the system comprising:

means for transmitting a configuration file to a cable modem;

means for receiving, at a headend, a first data packet from a first cable modem, the first data packet having a first service flow, the first data packet being mapped to a first sub-interface;

means for receiving, at a headend, a second data packet from the first cable modem, the second data packet having a second service flow, the second data packet being mapped to a second sub-interface;

means for deriving the first service flow and the second service flow at the headend; and

means for tagging the first data packet with a first MPLS tag and tagging the second data packet with a second MPLS tag, wherein the headend is unmodified.

9.   A system for enabling a cable modem to service multiple quality of service levels for a data packet transmitted from one or more connected IP-addressable devices, the system comprising:

means for receiving a configuration file upon powering up the cable modem, the configuration file containing one or more MPLS tags, an MPLS tag being associated with a service flow;

means for receiving a data packet from a connected IP-addressable device, the data packet having an IP address;

means for examining the IP address of the data packet; and

means for determining a classifier based on the IP address by examining the configuration file.

10.   A CMTS comprising stored program instructions for performing the method of claim 6.

11.   A cable modem comprising stored program instructions for performing the method of claim 7.